

ZHDANOV, G.B., glavnyy red.; IVANENKO, I.P., zam.glavnogo red.;  
 SYROVATSKIY, S.I., otv.red.toma; KHROMOV, B.A., zam.red.toma;  
 GERASIMOVA, N.M., red.; NIKISHOV, A.I., red.; ZETSEPIN, V.I.,  
 red.; DORMAN, L.I., red.; TULINOV, V.P., red.; FEDOROV, V.M.;  
 VAVILOV, Yu.N., red.; ABRASIMOV, A.T., red.; FRADKIN, M.I.,  
 red.izd-va; BRUZGUL', V.V., tekhn.red.

[Radiation belts of the earth. Primary cosmic radiation and its  
 properties and origin] Radiatsionnyi poias Zemli. Pervichnoe  
 kosmicheskoe izluchenie, ego svoistva i proiskhozhdenie. Moskva,  
 Izd-vo Akad.nauk SSSR, 1960. 258 p. (Trudy Mezhdunarodnoi  
 konferentsii po kosmicheskim lucham, no.3)

1. International Conference of Cosmic Radiation.  
 (Cosmic rays)

(MIRA 14:2)

ZATSEPIN, V.I.; FILATOVA, Z.A.

Bivalvular mollusk *Cyprina islandica* (L.), its geographical distribution and role in the communities of benthic fauna. Trudy Inst. okean. 46:201-216 '61. (MIRA 14:6)  
(Atlantic Ocean--Lamellibranchiata)

9.9843

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S/056/61/040/002/004/047

B113/B214

AUTHORS:

Denisov, Ye. V., Zatsapin, V. I., Nikol'skiy, S. I.,  
Pomanskiy, A. A., Subbotin, B. V., Tukish, Ye. I.,  
Yakovlev, V. I.

TITLE:

Observation of nuclear-active particles and electron-photon  
avalanches with energies greater than  $10^{12}$  ev at a height of  
3860 m above sea level

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40,  
no. 2, 1961, 412-425

TEXT: The nuclear-active and electron-photon component of high-energy  
cosmic radiation were studied to obtain additional data on the nature of  
nuclear interaction at energies  $\geq 10^{13}$  ev. The observations were made in  
1959 on the Pamir. The detector consisted of four rows of ionization  
chambers between which were placed lead and carbon, and over which were  
10 hodoscope groups containing 12 counters (330 cm<sup>2</sup> each). Besides, two  
cylindrical chambers were placed at a distance of 7 m from the middle of  
this setup, a hodoscopic point and detector of the energy density of the  
Card 1/3

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8/056/61/040/002/004/047

B113/B214

Observation of nuclear-active...

electron-photon component were at a distance of 18 m from the center and served to study the fluctuations of the particle flux. If the axis of the extensive atmospheric shower hits the recording area of the detector, the number of particles in the shower may be determined from the formula  $N = 1000 q$ , where  $q$  is the effective particle density of the particle flux per  $m^2$ . Assuming that in every event, nucleons and pions impart  $1/3$  of their energy to the new resulting pions, the energy of the nuclear-active particles was found to be given by  $E = 2.3 \cdot 10^8 N^{1.04} \text{ ev}$  which holds for the range  $10^{11} \text{ ev} \leq E \leq 5 \cdot 10^{14} \text{ ev}$ . In this energy range, the nuclear interaction cross section does not decrease with the increasing energy of the nucleons involved. From a comparison with the experimental data of other papers, the integral energy spectrum of the nuclear-active particles in the range  $10^{12} \div 10^{13} \text{ ev}$  can be expressed in the form  $f(E) \sim E^{-n}$ , where  $n = 1.57 \pm 0.1$ . For energies of nuclear-active particles  $< 10^{13} \text{ ev}$ , the energy spectra are determined from the spectral form of the primary particles with the help of the mean free path for nucleon interaction and the value of the inelasticity coefficient. In the intermediate range, the

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Observation of nuclear-active...

energy spectrum is not an exponential function, and is determined from the fluctuation in the number of collision events and in the value of the inelasticity coefficient, and also from the accuracy of energy measurement in each individual event of the recording of nuclear-active particles. Professors N. A. Dobrotin and G. T. Zatsepin are thanked for discussions; G. Ya. Goryacheva, G. V. Grishina, G. V. Minayeva, L. A. Miroshnichenko, A. M. Mozhayev, N. M. Nesterova, V. I. Sokolovskiy, and A. Ye. Subbotina are thanked for participation in the work. There are 4 figures and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR  
(Institute of Physics imeni P. N. Lebedev, Academy of  
Sciences USSR)

SUBMITTED: July 12, 1960

Card 3/3

ZATSEPIN, V.I.

Communities of bottom invertebrates of the Murman Coast of the Barents Sea and their relation to the North Atlantic communities. Report No.1. Trudy Gidrobiol. ob-va 12:245-344 '62. (MIRA 15:12)

1. Kafedra gidrobiologii Moskovskogo gosudarstvennogo universiteta.

(Murman Coast—Benthos)

3.24/0

38867

S/056/62/042/006/032/047  
B104/B108

AUTHORS: Zatsepin, V. I., Chudakov, A. Ye.

TITLE: Spatial distribution of the intensity of Cherenkov radiation  
in extensive atmospheric showers

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 6, 1962, 1622 - 1628

TEXT: The Cherenkov radiation generated by extensive atmospheric cosmic-ray showers on two observation levels of different altitudes is calculated. The angular and energy distributions of the electrons in the showers are adopted from the cascade theory of electron-photon showers. The shower axis meets the earth's surface at the point O (Fig. 1), the radiation pickup is at D, the figure OBCD lies in the drawing plane, the figure OO'A'B in a plane perpendicular to the drawing plane. The intensity of light generating electrons with energies between E and E + dE at the point D is determined. Numerical results obtained for showers from primary protons and photons of various energies are given (Table). There are 4 figures and 1 table. ✓

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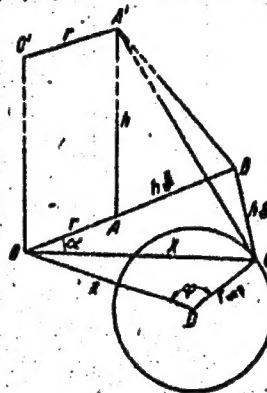
Spatial distribution of the ...

9/056/62/042/006/032/047  
B104/B108

SUBMITTED: January 17, 1962

Table. Numerical results. Legend: (1) Primary particles energy, (2) distance between shower axis and pickup, meters (Fig. 1), (3) total number of electrons in the shower, (4) total number of photons in the shower, (5) sea level, primary photon, (6) sea level, primary proton, (7) 3860 m above sea level, primary photon, (8) 3860 m above sea level, primary proton.

Fig. 1



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ACCESSION NR: AP4043647

S/0056/64/047/002/0689/0696

AUTHOR: Zatsepin, V. I.

TITLE: Angular distribution of the intensity of Cerenkov radiation from extensive cosmic ray air showers

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 689-696

TOPIC TAGS: cosmic ray shower, Cerenkov radiation, angular distribution, proton reaction, energy distribution

ABSTRACT: The angular distribution of the intensity is calculated for the Cerenkov radiation produced in the earth's atmosphere by extensive air showers of cosmic rays. Knowledge of this angular distribution is important from the point of view of optimizing the experimental conditions (optimizing the signal to noise ratio and the accuracy of the determined angular coordinates). The purpose of the calculation was to determine the number of light quanta.

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ACCESSION NR: AP4043647

within a certain wavelength interval, incident on a unit surface of the earth at a given distance from the axis of the shower and in a direction from any given point on the celestial sphere. It is also of independent interest to ascertain the amount of information that can be obtained from this angular distribution. The calculations were made for showers arriving from the zenith, and for observation conditions prevailing at sea level and at 3860 meters above sea level. The results were obtained with the aid of an electronic computer and are valid only for showers whose directions are close to the zenith. The primary proton energies range from  $1.5 \times 10^3$  to  $4.5 \times 10^6$  BeV. The numerical results were compared with the known experimental data. It is concluded that, since the maximum intensity of the light from the shower does not coincide with the direction of arrival of the primary particle, it becomes necessary to photograph the shower simultaneously from several positions in experiments in which the angular coordinates of the primary particle are determined by photographing the light flash from the shower. If the dis-

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ACCESSION NR: AP4043647

tance from the shower axis to the detector is determined from independent data, an analysis of the shape of the light flash from the shower and its total intensity gives information both about the initial energy of the primary particle and about the position in the atmosphere of the shower maximum, and can thus be used for the analysis of fluctuations in the development of showers in the atmosphere. "I thank A. Ye. Chudakov for suggesting the topic and for helpful discussions." Orig. art. has: 8 figures, 11 formulas, and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 02Mar63

ENCL: 00

SUB CODE: NP, AA

NR REF SOV: 003

OTHER: 003

Card 3/3

CHUDAKOV, A.Ye.; DADYKIN, V.L.; ZATSEPIN, V.I.; NESTEROVA, N.M.

Search for  $10^{13}$  ev. photons emanating from local radio sources.  
Izv. AN SSSR, Ser. fiz. 29 no.10:1870-1871 0 '65.

(MIRA 18:10)

L 180-66 FRL/TWT(1) D. G. W. -4

1. PUBLICATION NR AT5022824

IF 0001 45-000 000 0046 00-1

AUTHOR: Chudakov, A. Ye.; Dadykin, V. L.; Zatsepin, V. I.; Nesterova, N. M.

... with high-energy photons from discrete sources of ...

SOURCE: Vsesoyuznoye soveshchaniye po kosmofizicheskoy napravleniyu

10.14 TAGS: radio emission, photon emission, cosmic radio source, cosmic ray shower

ABSTRACT: In 1960-61, the authors attempted to detect photons coming from discrete sources of cosmic radio emission in the atmosphere.

... the ... in the ...  
...  
...  
... not exceed 1000 photons per second for ... and ...

L 1890-66

ACCESSION NR: AT5022824

2

This result conflicts with the hypothesis that electrons which produce the synchrotron radiation of the Crab Nebula are continuously formed and replenished by nuclear collisions, since the photon flux in this case would be 100 times greater than the high energy electron flux of the Crab Nebula either formed during the explosion or by subsequent acceleration. It is also being suggested that the high energy electrons are also being accelerated.

ASSOCIATION: Fizicheskii Institut im. P. I. Lebedeva, AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 29Oct64

ENCL: 00

SUB CODE: AA

NO REF SOV: 002

OTHER: 000

2/2

7-1552-46 299-13717 793-1-10700 (HIA) 1-10700 (HIA) 11/19/64

$$\text{ER}_1 \cap (\text{ER}_1 \cap \text{ER}_2) \cap \text{ER}_2 = \text{ER}_1 \cap \text{ER}_2 \cap \text{ER}_2$$

AUTHOR: Vernov, S. I.; Vakulov, P. Y.; Zatsepin, V. I.; Logachev, Yu. I.;

FILE: Primary cosmic radiation investigations

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostanstva

Topic TAGS: cosmic ray, cosmic radiation, primary cosmic ray, primary cosmic radiation, Elektron\_2, Elektron\_4

**ABSTRACT:** Experimental data obtained by Elektron-2 and -4 on primary cosmic radiation are presented and interpreted. The data, covering the period 30 January to 1 November 1964, were obtained primarily by means of gas-discharge counters with an average frequency of 20 pulses/sec. The apogee of the satellites was 68,000 km, keeping them outside the earth's radiation belts most of the time. The higher count frequency as the thickness of the screens was increased, made it possible to conclude that the primary radiation is composed of particles within the energy range  $10^4$  to  $10^6$  eV. Two types of radiation intensity variations were distinguished:

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L 1552-66

ACCESSION NR: AT5023628

those connected with the 11-year period of solar activity, and fast variations, with a period of the order of two weeks. The 11-year period variations grew in intensity at the rate of about 2 percent per month during the first half of 1964. During the second half of the year the intensity reached a ceiling and began to decrease. These data are in fair agreement with those of the Fort Belvoir and Deep River observation posts. Certain indications of

... considered conclusive. The ...  
... radiation with a constant amplitude per ...  
... the same radiation was made in April, 1951 ...

...period with the highest frequency. A regular clincher was ...  
...and 194 there was a ...  
...relative connection ...  
...period variations have a ...

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L 1952-46

ACCESSION NR. AT5023628

origin with the 11-year variations. It is also possible that the intensification  
of the activity is not a result of the intensification of the activity  
itself but of the intensification of the activity of the activity.

ASSOCIATION: none

REMARKS: none

NO. OF PAGES: 100

INDEX: 100

ATD PRESS: 14094

Card 1/1

KONOKOTIN, V.V.; ZATSEPIN, V.N.; LIBER, I.S., inzh., nauchnyy red.;  
MAKSIMOV, K.G., red.isd-va; POL'KINA, Ye.A., tekhn.red.

[Sanitary engineering installations in buildings] Sanitarno-  
tekhnicheskie ustroistva zdaniy. Leningrad, Gos.isd-vo lit-ry  
po stroit., arkhitekt. i stroit.materialam, 1960. 245 p.  
(MIRA 14:4)

(Sanitary engineering)

ZATSEPIN, V. R.

Krayev, A. P., Zatsepin, V. R., and Yanovskaya, H. B. "The first results of very deep electric sounding of the earth's crust", Vestnik Leningr. un-ta, 1948, No. 8, p. 3-12.

SO: U-2888, 12 Feb. 53, (Istopolis' Zhurnal 'nykh Statey, No. 2, 1949).

ZATSEPIN, Ye.N.; KARASIK, A.M.

Radioactivity of rocks on Queen Maud Land. Geofiz. biul.  
no.15:44-48 '65. (MIRA 18:11)

ZATSEPIN, Yu.A.

Speed of the "SFR" high-speed photorecording unit. Zhur.nauch.  
i prikl.fot. i kin. 9 no.61463-464 N-D '64.

(MIRA 18:1)

1. Institut fiziki Zemli imeni O.Yu.Shmidta AN SSSR.

ZATSEPIN, Yu. A.

Nomograms for exposure calculations in the photography of self-luminous objects. Zhur.nauch. i prikl.fot. i kin. 8 no.5:353-359 S-O '63. (MIRA 16:9)

1. Institut khimicheskoy fiziki AN SSSR.



ZATSEPIN, Yu.A.

Investigating the reciprocity law failure at exposures from  
 $10^{-5}$  to  $10^{-8}$  sec. Zhur.nauch.i prikl.fot.i khim. 5 no.1:  
60-61 Jan-F '60. (MIRA 13:5)

1. Institut khimicheskoy fiziki Akademii nauk SSSR.  
(Photography--Instantaneous) (Photometry)

ZATSEPINA, E.M.; TUMANOV, A.K.

Exchange of experience. Zav.lab. 28 no.11:1333 '62.  
(MIRA 15:11)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.  
(Metals--Spectra)

ZATSEPINA, G. N.

"Neutron Yield in Photofission of Uranium and Thorium," paper read at the  
1-5 Jul 1955 meeting of the AS USSR, Moscow.

**"APPROVED FOR RELEASE: 03/15/2001**

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ZATZEPINA, G. N., POSPELOV, A. N. and LAZAREVA, L. E.

"Energy Spectrum and Angular Distribution of Photo Neutrons from Bi." a paper presented at the International Conference on Nuclear Reactions, Amsterdam, 2-7 July 1956.

D551274

ZATSEPINA, G.N.

AUTHOR: ZACEPINA, G.N., LAZAREVA, L.E., POSPELOV, A.N. PA - 2031  
 TITLE: The Angle- and Energy Distribution of the Photoneutrons  
 emerging from Bi. (Russian)  
 PERIODICAL: Zhurnal Eksperimental'noi i Teoret.Fiziki, 1957, Vol 32, Nr 1,  
 pp 27-30 (U.S.S.R.)  
 Received: 3 / 1957 Reviewed: 3 / 1957

ABSTRACT: The treatise in question studies with the method of thick  
 layer emulsions the distribution of the energy of the photo-  
 neutrons flying out of bismuth at different angles in relation  
 to the direction of the X-ray bundle. Measurements were taken on  
 the 30 MeV synchrotron of the Physical Institute of the Academy  
 of Sciences with a maximum energy of the X-rays ( $E_{\max} = 18,9$  MeV).  
 A drawing demonstrates the arrangement of the experiment and of  
 the photo plates during the irradiation. The dose of the X-rays  
 was measured with a thin integral ionization chamber. The mean  
 value of the background was 10 to 16° at the different angles.  
 On the occasion of microscopic investigation only those recoil  
 protons were registered which were scattered against the  
 moving direction of the neutrons into small angles. The necess-  
 ary corrections are shortly mentioned. The number of the pro-  
 tons recorded on the plates which were arranged at angles of  
 30, 90, 150 and 270° amounted to 2605 after deduction of the

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The Angle- and Energy Distribution of the Photo-neutrons emerging from Bi. (Russian)

PA - 2031

background. A diagram illustrates the spectra of energy  $I(\xi)$  of the photo neutrons obtained at the angles mentioned. The spectra of the neutrons obtained at  $30^\circ$  and  $150^\circ$  are equal within the limits of errors. For  $\gamma$  radiation SCHIFF'S spectrum was used. The modifications of the spectrum of the X-rays while passing the bismuth test and the non-elastic scattering of the neutrons in the test have not been considered. Consideration of these corrections must increase the relative number of the neutrons with the highest energy. The two spectra calculated according to the statistical theory do not agree with the distributions of energy which were obtained for the photo neutrons emerging from bismuth. The experimental spectra of the neutrons agree with the calculated spectra only within a range of energy of from 1,5 to about 4 MeV. Beyond 4 MeV there is a considerable number of neutrons the yield of which must practically be equal to zero after the model of evaporation. At the angles of  $90^\circ$  and  $270^\circ$  the yield of neutrons with more than 4 MeV is considerably larger than at angles of  $30^\circ$  and  $150^\circ$ . The relative yields of neutrons of different energies are laid down in an index. The angle anisotropy increases considerably

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The Angle- and Energy Distribution of the Photo-  
neutrons emerging from Bi. (Russian)

with the growing energy of the neutron. The dates obtained here must apparently be considered as the result of two different reciprocal actions of the  $\gamma$ -quanta with the nuclei: namely the absorption of the  $\gamma$ -quanta with production of a compound nucleus and successive evaporation and of the direct photoeffect.

ASSOCIATION: Physical Institute "P.N.LEBEDEV" of the Academy of Sciences  
of the USSR

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 3/3

ZATSEPINA, G. N.

IGONIN, V. V., LAZAREVA, L. Ye., LEPESTKIN, A. I., ZATSEPINA, G. N.

"Angular and Energy Distribution of Photoneutrons,"

Lebedev Physics Inst, Acad. Sci. USSR and Saratov State University)

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy  
Physics, Moscow, 19-27 Nov 57.

ZATSEPINA, G.N.; SHNOL', S.E.

Study of the course of adenosinetriphosphatase reaction by  
the appearance of hydrogen ions in the medium. Biofizika 10  
no.1:37-41 '65. (MIRA 18:5)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo univer-  
siteta imeni Lomonosova i Institut biologicheskoy fiziki AN  
SSSR, Moskva.

**"APPROVED FOR RELEASE: 03/15/2001**

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SOURCE: Zhurnal sinap. i teer. flakki, v. 44, no. 6, 1961-1962

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DARANOV, V.I.; PAVLOTSKAYA, F.I.; FEDOSEYEV, G.A.; TYURYUKANOVA, E.B.;  
RODIONOVA, L.M.; BABICHEVA, Ye.V.; ZATSEPINA, L.N.; VOSTOKOVA, T.A.;  
Prinimali uchastiye: YEMEL'YANOV, V.V.; BELYAYEVA, L.I.; LEVKINA, N.I.;  
MOLCHANOVA, I.V.

Distribution of  $Sr^{90}$  on the surface horizon of soils of the Soviet  
Union during 1959-1960. Atom. energ. 18 no.3:246-250 Mr '65.  
(MIRA 18:3)

L 48994-65 EWT(m)/EWP(b)/EWP(t) Feb DIAAP/IJP(c) JD

ACCESSION NR: AP5014016

UR/0089/65/018/003/0246/0250 28

AUTHOR: Baranov, V. I.; Pavlotskaya, F. I.; Fedoseyev, G. A.; Tyuryukanova, E. B.;  
Rodionova, L. M.; Babicheva, Ye. V.; Zatschina, L. N.; Vostokova, T. A.

TITLE: Distribution of  $Sr^{90}$  over the ground layer in Soviet Union from 1959-1960

SOURCE: Atomnaya energiya, v. 18, no. 3, 1965, 246-250

TOPIC TAGS: strontium, isotope, soil, soil property

ABSTRACT: Data are given on the distribution of  $Sr^{90}$  in the Soviet Union during 1959-60. Observations indicated the tendency of  $Sr^{90}$  to latitudinal distribution with maximum concentration at 50 to 30° latitude. The mean content of  $Sr^{90}$  in the upper layer of the soil (5 and 15 cm in depth) was 14.1 and 17.8  $\mu C/cm^3$  respectively. The amount of  $Sr^{90}$  in the soil did not increase during 1960. The migration of  $Sr^{90}$  in soil layer depends mainly on the terrain and geochemical conditions. Orig. art. has 2 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 05Feb64

ENCL: 00

SUB CODE: NP, ES

NO REF SOV, 006

OTHER: 014

NA

Cord 1/1/13

TYURYUKANOVA, E.B.; PAVLOTSKAYA, F.I.; TYURYUKANOV, A.N.; ZATSEPINA, L.N.;  
BABICHEVA, Ye.V.; RODIONOVA, L.M.

Migration and distribution of strontium-90 and cerium-144 in the  
soils of Moscow Province. Pochvovedenie no.10:66-73 O '64.  
(MIRA 17:11)

1. Institut biokhimii i analiticheskoy khimii imeni Vernadskogo.

ZATSEPINA, L. P.

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PHASE I BOOK EXPLOITATION SOV/5469

Soveshchaniye po kriticheskim yavleniyam i flyuktuatsiyam v rastvorakh. Moscow, 1960.

Kriticheskiye yavleniya i flyuktuatsii v rastvorakh; trudy soveshchaniya, yanvar' 1960 g. (Critical Phenomena and Fluctuations in Solutions; Transactions of the Conference, January 1960) Moscow, Izd-vo AN SSSR, 1960. 190 p. 2,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova. Khimicheskiy fakul'tet.

Responsible Ed.: M. I. Shalchparenov, Doctor of Chemical Sciences, Professor; Ed. of Publishing House: E. S. Dragunov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of articles is intended for scientific personnel concerned with chemistry, physics, and heat power engineering.

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Critical Phenomena and Fluctuations

SOV/5469

COVERAGE: The book contains 24 of the 26 reports read at the Conference on Critical Phenomena and Fluctuations in Solutions organized by the Chemical Division of Moscow State University, January 26-28, 1960. The reports contain results of investigations carried out in recent years by Soviet physicists, chemists, and heat power engineers. The Organizing Committee of the Conference was composed of Professor Kh. I. Amirkhanov, A. Z. Golik, I. R. Krichevskiy (Chairman), V. K. Semenchonko, A. V. Storonkin, I. Z. Fisher, and M. I. Shakhparonov (Deputy Chairman). References accompany individual articles.

TABLE OF CONTENTS:

Foreword

3

Amirkhanov, Kh. I., A. M. Korimov, and B. G. Alibekov [Laboratoriya molekulyarnoy fiziki, Dagestanskiy filial AN SSSR -- Laboratory of Molecular Physics, Dagestan Branch, AS USSR]. Thermophysical Properties of Matter at Critical Temperature

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Critical Phenomena and Fluctuations

SOV/5469

Akhadov, Ya. Yu., and M. I. Shakhparonov [Laboratoriya fiziko-khimii rastvorov, Khimicheskyy fakul'tet, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova -- Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Dielectric Properties of Solutions in a Superhigh Frequency Field and Concentration Fluctuations

14

Beridze, D. K., and M. I. Shakhparonov [Laboratory of Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Light Scattering in Solutions Having a Critical Stratification Point

21

Vuks, M. F., and L. I. Lisnyanskiy [Laboratoriya molekulyarnoy optiki, Fizicheskyy fakul'tet, Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova -- Laboratory of Molecular Optics, Physics Division, Leningrad State University imeni A. A. Zhdanov]. Intermolecular Interaction and Light Scattering in Solutions of Pyridine and  $\alpha$ -Picoline in Water

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Critical Phenomena and Fluctuations

SOV/5469

Zatacpina, L. P., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Rayleigh Light Scattering in Nitrobenzene -- Cyclohexane and Ethyl Alcohol -- Diethylamine Solutions

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Kasimov, R. M., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Dielectric Properties of Solutions in Electromagnetic Fields of the Millimetric Band and Concentration Fluctuations

37

Krichevskiy, I. R., and N. Ye. Khazanova [Laboratoriya vysokikh davleniy, GIAP -- Laboratory of High-Pressure [Studies], Moscow State Design and Planning Scientific Research Institute of the Nitrogen Industry]. Diffusion of Liquid and Gaseous Solutions in the Critical Region

45

Krichevskiy, I. R., and Yu. V. Tsokhanskaya [Laboratory of

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High-Pressure [Studies], GIAP]. Kinetics of Heterogeneous Processes in the Critical Region

54

Krichavskiy, I. R., N. Ye. Khazarova, and L. R. Linshits [Laboratory of High Pressure (Studies), GIAP]. Liquid-Vapor Equilibrium in the Critical Region of Liquid-System Stratification

61

Lomova, N. N., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Permittivity and Molecular Structure of Solutions

73

Lanshina, L. V., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Thin Structure of the Line of Rayleigh Light Scattering in Solutions

77

Makhev, N. V., and Ya. M. Labkovskiy [Kafedra eksperimental'noy fiziki, Dnepropetrovskiy gosudarstvennyy universitet -- Depart-

Card 5/9

-30

Critical Phenomena and Fluctuations

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ment of Experimental Physics, Dnepropetrovsk State University].  
Investigation of Density Fluctuations in Ether and Benzene  
Based on X-Ray Scattering at Narrow Angles

81

Mokhov, N. V., and I. V. Kirsh [Department of Experimental  
Physics, Dnepropetrovsk State University] Variation in the  
Sizes of Concentration Fluctuations in Relationship to Tem-  
perature and Concentration in Binary Liquid Systems Having  
an Upper Critical Dissolving Temperature

89

Nozdrev, V. P., B. I. Kal'yanov, and M. G. Shirkevich [Moskov-  
skiy oblastnoy pedagogicheskoy institut -- Pedagogical Insti-  
tute of the Moscow Oblast]. Hypersonic Investigation in  
Organic Liquids at Constant Density in the Vicinity of the  
Critical State

93

Rott, L. A. [Minskiy lesotekhnicheskoy institut -- Minsk  
Forestry Engineering Institute]. Concerning the Diffusion in  
the Critical Stratification Region

102

Card 6/9

30

Critical Phenomena and Fluctuations

SOV/5469

Roshchina, G. P. [Laboratoriya molekulyarnoy fiziki, Fizicheskii fakul'tet, Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko -- Laboratory of Molecular Physics, Division of Physics, Kiyev State University imeni T. G. Shevchenko] Investigation of Fluctuations in Solutions by the Method of Light Scattering 109

Skrupov, V. P. [Laboratoriya molekulyarnoy fiziki, Ural'skiy politekhnicheskiy institut im. S. M. Kirova -- Laboratory of Molecular Physics, Ural Polytechnic Institute imeni S. M. Kirov]. Special Structural Features of Matter in the Vicinity of the Critical Point and Transfer Phenomena 117

Skrupov, V. P., and Yu. D. Kolpakov [Laboratory of Molecular Physics, Ural Polytechnic Institute imeni S. M. Kirov, and the Laboratoriya teplofiziki, Ural'skiy filial AN SSSR -- Thermophysics Laboratory, Ural Branch, AS USSR]. Light Scattering in Carbon Dioxide along Pre- and Post-Critical Isotherms 126

Smirnov, B. A. Institut neftekhimicheskogo sinteza AN SSSR -- Card 7/9

30

- Critical Phenomena and Fluctuations SOV/5469
- Institute of Petrochemical Synthesis, AS USSR (Moscow)] Visual  
Observations in the Critical Region 137
- Fisher, I. Z., and V. K. Frokhoronko. Concerning the Fluct-  
uations of Coordination Numbers in Liquids 142
- Fisher, I. Z. [Belorusskiy Gosudarstvennyy Universitet -- Belo-  
russian State University (Minsk)] Correlation Analysis of the  
Critical Point 148
- Shakhparonov, M. I. [Laboratory of the Physical Chemistry of Solu-  
tions, Chemistry Division, Moscow State University imeni M. V.  
Lomonosov]. Fluctuations in Solutions 151
- Shimanskaya, Yo. T., and A. Z. Golik [Laboratory of Molecular  
Physics, Physics Division, Kiev State University imeni T. G.  
Shevchenko]. Investigation of the Critical State, Liquid-  
Vapor, of Solutions by Tepler's Method 161

Card 8/9

30

Critical Phenomena and Fluctuations

SCV/5469

Shimanskaya, Ye. T., Yu. I. Shimanskiy, and A. Z. Golik [Laboratory of Molecular Physics, Division of Physics, Kiev State University imeni T. G. Shevchenko]. Investigation of the Critical State of Pure Substances by Topley's Method

171

Resolution of the Conference on Critical Phenomena and Fluctuations in Solutions

189

AVAILABLE: Library of Congress (QD545.S73)

JP/dfk/jw  
10-28-61

Card 9/9

PAVLOTSKAYA, F.I.; FEDOSEYEV, G.A.; BABICHEVA, Ye.V.; ZATSEPINA, L.N.;  
TYURYUKANOVA, E.B.

Methods of determining strontium-90, stable strontium, and calcium  
in soils and plant residues. Pochvovedenie no.2:105-112 F '64.

(MIRA 17:3)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo.

L 05801-67 EWT(m) GD

ACC NR: AT6031240

SOURCE CODE: UR/0000/65/000/000/0001/0021

AUTHOR: Pavlotskaya, E. I.; Zatssepina, L. N.; Tyuryukanova, E. B.;  
Baranov, V. I.

28  
B+

ORG: none

TITLE: Mobility and forms of occurrence of strontium-90, stable strontium,  
and calcium in turf-podzol <sup>19</sup>

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii.  
Doklady, 1965 O podvizhnosti i formakh nakhozhdeniya strontsiya-90, stabil'nogo  
strontsiya i kal'tsiya v dernovo-podzolistoy i chernozemnoy pochvakh, 1-21

TOPIC TAGS: strontium, calcium, radioactive fallout, stable strontium,  
strontium mobility, calcium strontium occurrence, stable strontium mobility,  
calcium mobility, calcium occurrence

ABSTRACT: A study was conducted to determine the mobility of fallout strontium-  
90, stable strontium, and calcium, and the forms in which they occur in different  
genetic horizons in turfy podzol soils of the forest zone and in chernozem soils of  
the steppe zone. (Mobility is defined as the ratio between the total amount of the  
element in water-soluble and exchange states as compared with the amount in an  
acid 1/2

L 05801-67

ACC NR: AT6031240

acid-soluble solution, expressed in percentage). It was found that in the furrow slice in turfy podzol soils the mobility of strontium-90, stable strontium, and calcium is practically the same and constitutes 90%; in typical chernozem the mobility of radioactive and stable strontium is to an order of 65%, and that of calcium 85%. In virgin soils the same mobility ratios prevail, but at lower values. The observed differences in mobility between turfy podzol loamy soils and chernozem, and between cultivated and virgin lands are mainly a function of the difference in the possibility of their occurrence in a water-soluble state. Furthermore, strontium-90 occurs in a greater degree in the water-soluble state than stable strontium or calcium. Besides the physicochemical properties of soils, a significant effect on the form of occurrence, mobility, and the character of distribution of strontium-90, stable strontium, and calcium in the soil is the source of the element, soil texture (in the case of virgin soils), and the agricultural practices used (in the case of cultivated soils). Thus, the form of occurrence and mobility of the elements discussed in a given soil is a function of the soil's physicochemical composition, its genetic structure, vegetation cover, and amount and composition of the organic component. Orig. art. has: 5 figures and 6 tables. [Based on authors' abstract]

SUB CODE: 08, 20/ SUBM DATE: none/ ORIG REF: 013/ OTH REF: 015/

Card 2/2



L 41037-66 EWT(m)

ACC NR: AP6013728

(A) SOURCE CODE: UR/0089/66/020/004/0333/0337

AUTHOR: Pavlotskaya, F. I.; Zatsepina, L. N.

ORG: none

TITLE: The study of the forms in which certain fission products reach the surface of the Earth

SOURCE: Atomnaya energiya, v. 20, no. 4, 1966, 333-337

TOPIC TAGS: radioactive fallout, soil behavior, radio strontium, cesium compound, cerium compound

ABSTRACT: In the study of the behavior and forecasting of the migration of radioactive fission products in soil and alimentary chains it is necessary to know the forms in which these materials reached the Earth. Consequently, the authors carried out a study of the radioactive fallout in the Moscow region containing  $\text{Sr}^{90}$ ,  $\text{Ce}^{144}$ , and  $\text{Cs}^{137}$ . An analysis of the results shows that the distribution between the solvable and unsolvable fractions is fixed by the chemical properties of the isotopes, the amount of the solid phase, and the type of fallout and its physical state. For the three isotopes under study, the order of occurrence within water-soluble states is  $\text{Sr}^{90} > \text{Cs}^{137} > \text{Ce}^{144}$ . Although the dominant form in which the isotopes

Card 1/2

UDC: 551.578.9:621.039.71

L 41037-66

ACC NR: AP6013728

are found in solvable form is the cation type (on the average 59, 75, and 86% of the  $Ce^{144}$ ,  $Cs^{137}$ , and  $Sr^{90}$  fallout, respectively) a considerable portion of these isotopes appear in anion and neutral forms. Radiactive isotopes found within the nonsoluble fallout fractions also participate in the process of migration occurring within the soil-plant cover.  $Sr^{90}$  appears to be the most mobile, and  $Co^{144}$  the least mobile. Orig. art. has: 4 tables.

SUB CODE: 18/ SUBM DATE: 14Dec64/ ORIG REF: 014/ OTH REF: 002

Card 2/2

ACCESSION NR: AT4040005

S/2789/63/000/051/0003/0013

AUTHOR: Bodunova, L. I.; Zatsepina, L. P.; Solov'yev, A. D.

TITLE: Comparison of the effectiveness of dispersed solutions in a cloud chamber

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy\*, no. 51, 1963, 3-13

TOPIC TAGS: meteorology, fog, aerosol, resorcinol, cloud chamber, cloud seeding, fog dispersal, acetone, alcohol

ABSTRACT: A comparison of the effectiveness of solutions of various substances in dispersing an aqueous aerosol was made in the cloud chamber of the Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory). The authors formulated and checked a simple criterion which makes it possible to evaluate the effectiveness of soluble substances on the basis of tabulated data on the properties of these substances. The concentrations of the solutions were selected in such a way that equal volumes of these solutions contained identical quantities of particles of the dissolved substances. Sodium chloride was used as a control, since NaCl does not form hydrates and its solution conforms quite well to the Raoult law even at very high concentrations. Tables give the characteristics of the investigated substances and their solutions; the research method is described fully. The results revealed that the only physicochemical characteristic which

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ACCESSION NR: AT4040005

exerted an influence on the effectiveness of these substances was volatility. Experiments on the effect of resorcinol showed that when the mean drop size is several tens of microns the influence of the volatility of the substance on the effectiveness becomes appreciable, provided the vapor pressure of the substance attains  $10^{-4}$  mm Hg. Among the highly volatile substances used were acetone, ethyl, butyl and isoamyl alcohols, etc. None of these compounds were effective. This agrees with earlier research which revealed that alcohol and ammonia have virtually no effect on the sedimentation of an aqueous fog. Acetic acid, a slightly volatile substance, had a small effect. The formulated criterion indicates that the effectiveness of dispersed solutions on an aqueous aerosol is determined by the quantity of molecules (ions) of the dissolved substance per unit volume of the solution, on condition that the solution is quite dilute at the end of the process. The method described ensures identical dispersion of solutions with different physicochemical characteristics. It is shown that non-volatile substances, used in equivalent concentrations and with the same dispersion, have a virtually identical fog dispersal effect. The effect decreases with increasing volatility. "The authors express thanks to N. A. Sorokina, who participated in the experiments". Orig. art. has: 4 formulas, 5 figures and 3 tables.

2/3

Card

ACCESSION NR: AT4040005

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

DATE ACQ: 25Jun64

ENCL: 00

SUB CODE: ES

NO REF SOV: 005

OTHER: 003

Card 3/3

BODUROVA, L. I.; ZATSEPINA, L. P.; SOLOV'YEV, A. D.

Comparative effectiveness of dispersed solutions in the  
chamber of fogs. Trudy TSAO no. 51:3-13 '63. (MIRA 17:5)

L 12104-66 EWT(1)/EWT(m)/FCC/T

DS/AM/CM

ACC NR. ATSO28265

SOURCE CODE: UR/2789/65/000/065/0067/0082

NOVA, L. I.; Zatschina, L. P.; Solov'yov, A. D.

control

the mechanism of the interaction of powder particles with water droplets

compressed sample of the powder. The action of the powder with aerosol was studied by two methods: 1) by noting the changes in optical density of an aqueous aerosol when dispersing the powder in a cloud

Card 1/2

L 12104-66

ACC NR: AT5028265

SUB CODE: 04 / SUBM DATE: none / SOV REF: 007 / OTH REF: 002

Card 2/2



ZATSEPINA, N.D.

VOYNOVA, T.I., kandidat meditsinskikh nauk; ZATSEPINA, N.D., nauchnyy  
sotrudnik; MIKHINA, M.V., glavnyy okulist Mordovskoy ASSR

Treatment of trachoma with synthomycin. Vest. oft. 33 no.6:  
13-17 N-D '54. (MLRA 8:1)

1. Iz Nauchno-issledovatel'skogo instituta glasnykh bolezney imeni  
Gel'mgol'tsa (dir. chlen-korrespondent AMN SSSR prof. V.M.Arkhan-  
gel'skiy)

(TRACHOMA, therapy,  
chloramphenicol)  
(CHLORAMPHENICOL, therapeutic use,  
trachoma)

Country : USSR  
Category : Pharmacology and Toxicology. Chemotherapeutic V  
Preparations. Antibiotics  
Abs. Jour. : Ref Zhur-Biol, No 13, 1958, No 61550  
Author : Voinova, T. I.; Zatssepina, N. D.; Mizina, A. V.  
Institut. : State Scientific Research Institute of Eye  
Title : Therapeutic Action of Terramycin in Trachoma  
Orig. Pub. : Uch. zap. i inform. metod. materialy. Gos. n.-  
i. in-t glazn. bolezney, 1957, No 5, 107-108  
Abstract : No abstract.  
\* Diseases  
Card: 1/1  
V - 40

ZATSEPINA, N.D.

VOINOVA, T.I., kand.med.nauk; ZATSEPINA, N.D.; MIZINA, A.V.

Treatment of trachoma with antibiotics. Sov.med. 21 no.9:35-37  
S '57. (MIRA 11:1)

1. Iz Nauchno-issledovatel'skogo instituta glavnykh bolezney imeni  
Gel'mgol'tsa (dir. - kandidat meditsinskikh nauk A.V.Roslavtsev)  
(TRACHOMA, ther.  
antibiotics)  
(ANTIBIOTICS, ther. use  
trachoma)

ZATSEPINA, N. D.

VOINOVA, T.I., kandidat meditsinskikh nauk; ZATSEPINA, N.D., nauchnyy sotrudnik.;  
MIZINA, A.V., glavnyy okulist Mordovskoy ASSR.

Use of terramycin in trachoma. Vest. oft. 70 no.1:10-15 Ja-V '57  
(MLRA 10:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh  
bolezney imeni Gel'mgol'tsa (dir.-kandidat meditsinskikh nauk A.V.  
Roslavtsev)

(OXYTETRACYCLINE, ther. use  
trachoma) (Rus)

(TRACHOMA, ther.  
oxytetracycline) (Rus)

ZATSEPINA, N.D.

Dynamics of cytological changes in the treatment of trachoma with  
terramycin and tetracycline. Vest.oft. 72 no.5:3-13 S-O '59.  
(MIRA 13:3)

1. Nauchno-issledovatel'skiy institut glaznykh bolezney imeni Gel'm-  
gol'tsa (direktor A.V. Boslavtsev).  
(TRACHOMA, ther.)  
(OXYTETRACYCLINE, ther.)  
(TETRACYCLINE, ther.)

ZATSEPINA, N.D.

Change in the morphological structure of Prowazek's bodies in  
trachoma patients treated with dibiomycin. Vest.oft. no.4:34-  
38 '61. (MIRA 14:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh  
bolezney imeni Gel'mgol'tsa.  
(CONJUNCTIVITIS, GRANULAR) (AUREOMYCIN)

VOINOVA, T.I., kand.med.nauk; ZATSEPINA, N.D.

Use of dibionycin in trachoma. Vest.oft. no.4:29-34 '61.  
(MIRA 14:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh  
bolezney imeni Gel'mgol'tsa.  
(CONJUNCTIVITIS, GRANULAR) (AUREOMYCIN)

YERMOL'YEVA, Z.V.; LAZAREVA, Ye.N.; VOINOVA, T.I.; AVER'YANOVA, L.L.;  
ZATSEPINA, N.D.

Prospects for the use of diblomyein in treating trachoma. Antibiotiki  
6 no.9:58-61 S '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov i  
Nauchno-issledovatel'skiy institut glaznykh bolezney imeni Gel'mgol'tsa.  
(AUREOMYCIN) (CONJUNCTIVITIS, GRANULAR)



L-34473-66 EWP(J) WW/JW/RM

ACC NR: AP6026204

SOURCE CODE: CE/0070/66/002/001/0023/0032

AUTHOR: Tupitsyn, I. F.; Semenova, N. K.; Zatsepina, N. N.; Musakin, A. A. 40  
B

ORG: Institute for Applied Chemistry, Leningrad

TITLE: Basic exchange hydrogen reaction of some nitrous heterocycles in liquid ammonia: kinetics, relation with electron structure, mechanism [This paper was presented at the 3rd Conference on Stable Isotopes held in Leipzig in October 1963.]

SOURCE: Isotopenpraxis, v. 2, no. 1, 1966, 23-32

TOPIC TAGS: pyridine, heterocyclic base compound, chemical kinetics, ammonia, toluene, radiation chemistry, isotope

ABSTRACT: The reactivity of the different positions of the aromatic ring of pyridine, quinoline, acridine, and phenazine was studied in the deuterio-exchange reaction with the  $\text{NH}_2^- + \text{NH}_3$  (liq.) solution. The rate constants, activation parameters, and kinetic isotope effects were determined. The kinetics of hydrogen exchange in toluene and  $\alpha$ - and  $\beta$ -picoline with the solution were also studied. The findings were explained in terms of the carbanionic mechanism. The authors thank A. A. Samakhov and G. G. Gusev who directed the work on the synthesis of the majority of the most useful deuterio-compounds. Orig. art. has: 10 tables. [Based on authors' Eng. abst.] [JPRS: 35,397]

SUB CODE: 07, 18 /- SUBM DATE: 19Jul64 / ORIG REF: 008 / OTH REF: 014

Card 1/1 82

0916 1751

ZATSEPINA, N.N.; TUPITSYN, I.F.; EFROS, L.S.

Hydrogen-isotope exchange in methyl derivatives of nitrogen heterocycles and their N-oxides. Part 2: Reactivity and electron structure of isomeric picolins, their N-oxides, and quaternary salts. Zhur. ob.khim. 34 no.12:4065-4071 D '64 (MIRA 18:1)

Hydrogen-isotope exchange in methyl groups of nitrogen heterocycles derivatives and their N-oxides. Part 3: Reactivity and electron structure of  $\alpha$  methyl substituted heterocycles and their N-oxides. Ibid.:4072-4080

ZATSEPINA, N.N.; TUPITSYN, I.F.; EFROS, L.S.

Electronic structure and the rate of deuterium exchange in  
methyl groups of nitrogen heterocycles and their N-oxides.  
Dokl. AN SSSR 154 no.1:148-151 Ja'64. (MIRA 17:2)

1. Gosudarstvennyy institut prikladnoy khimii. Predstavleno  
akademikom A.N. Tereninym.

ZATSEPINA, N.N.; TUPITSYN, I.F.; EFROS, L.S.

Isotopic exchange of hydrogen in methyl derivatives of nitrogen heterocycles and their oxides. Part 1:  $\alpha$ -picoline, quinaldine, and their N-oxide. Zhur. ob. khim, 33 no.8:2705-2712 Ag '63.  
(MIRA 16:11)

KUKUSHKIN, Yu.N.; ZATSEPINA, N.N.

Reactivity of amines in the inner sphere of tetravalent platinum.  
Zhur. neorg. khim. 6 no.1:120-123 '61. (MIA 14:2)  
(Platinum compounds)

ACC NR: AP6018014

SOURCE CODE: UR/0413/66/000/010/0146/0146

INVENTOR: Gel'man, V. A.; Zatssepina, N. S.

ORG: None

TITLE: A highly refractory material. Class 80, No. 182040

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 146

TOPIC TAGS: refractory compound, refractory product

ABSTRACT: This Author's Certificate introduces a highly refractory material for making heat resistant products. The material is based on artificial corundum, aluminum hydroxide and a phosphate binder. The heat resistance of finished products is increased by making the material from the following components (in wt.%): white synthetic corundum—41-47% with 0.8-1 mm grains and 32-37% with 0.03-0.05 mm grains; 9-10% aluminum hydroxide with a specific surface of 700 cm<sup>2</sup>; 6-18% orthophosphoric acid (60% concentration).

SUB CODE: 11, 07/ SUBM DATE: 10Apr64

UDC: 666.764.32

Cord 1/1

ZATSEPINA, R.A.

Study on the ecological osteology of rodents in the Tatar A.S.S.R.  
Uch.zap.Kaz.un.115 no.8:241-247 '55. (MIRA 10:3)

1. Deystvitel'nyy khlen Obshchestva yestestvoispytateley.  
(Tatar A.S.S.R.—Rodentia)  
(Bones)

ZATSEPINA, R.A.

Destruction of eggs of some passerine birds as related to the  
construction of Kuybyshev Reservoir. Ornitologiya no.7:470 '65.  
(MIRA 18:10)



S/190/61/003/001/016/020  
B119/B216

AUTHORS: Zataepina, T. I., Trapeznikov, A. A.

TITLE: Strength, deformation and viscosity of solutions of acrylonitrile rubber in toluene-decalin at increased deformation rate

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 1, 1961, 113-121

TEXT: The present study was undertaken with a view to explaining the influence of solvents on the structure and characteristic properties of polymer solutions. Measurements were carried out on 10% solutions of CKH-18 (SKN-18) acrylonitrile rubber (component ratio of acrylonitrile: divinyl = 18:82) in various mixtures of toluene - decalin as well as in the pure solvents. A strain gage described in (Ref. 8) was used for the measurements. Elastic elongation,  $\epsilon_e$ , and stress,  $P$ , were calculated by a method also given in Ref. 8. The tests were performed at strain rates ranging from 36 to 1100  $\text{sec}^{-1}$ . Shear strength, elongation at rupture and reversible elongation were determined. With toluene, SKN-18 forms solutions

Card 1/2

S/190/61/003/001/016/020  
B119/B216

Strength, deformation and viscosity...

of low structure and low elasticity (maximum elastic elongation 500%), strength, viscosity and low relaxation times. The presence of decalin in the solvent leads to structure formation (as a result of intermolecular interaction), causing an increase of elasticity (elastic elongation is 1400% in a solvent mixture containing 50% decalin), strength, viscosity and relaxation times. Maximum values for the above properties were obtained in a 50% decalin solvent mixture. At higher percentages of decalin the results are less favorable owing to microcoagulation. The solutions under study were of thixotropic strength. The time of thixotropic recovery increases with the content of decalin. There are 9 figures, 3 tables, and 11 references: 10 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR)

SUBMITTED: June 12, 1960

Card 2/2

ZATSEPINA, T.I.; TRAPEZNIKOV, A.A.

Strength, elastic and thixotropic properties of concentrated aluminum  
naphthenate gels and the effect on them of polar addends. Koll.zhur.  
23 no.6:690-698 N-D '61. (MIRA 14:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva.  
(Naphthenic acid) (Colloids)

L 11/719-66

EWI(M)/BWF(1)/T/ETC(M)/-0

ACC NR: AP6004198

SOURCE CODE: UR/0069/66/028/001/0039/0045

AUTHORS: Zatssepina, T. I.; Trapeznikov, A. A.; Shcherbakova, R. N.

ORG: Institute for Physical Chemistry, AN SSSR Moscow (Institut fizicheskoy khimii AN SSSR)

TITLE: Rheological properties of low-molecular polymethylsiloxane polymer and of pastes derived from it

SOURCE: Kolloidnyy zhurnal, v. 28, no. 1, 1966, 39-45

TOPIC TAGS: silicon compound, siloxane, polymer, rubber, synthetic rubber, polymer rheology, rheologic property

ABSTRACT: The rheological properties of low-molecular weight ( $M = 37\ 000$ ) polymethyl siloxane polymer and of white carbon-black (BS-280) pastes derived from it were studied. The experimental procedure was described by A. A. Trapeznikov, (Kolloidn. zh., 21, 108, 1959). The dependence of the tensile strength and viscosity of the polymer and pastes as a function of the white carbon-black filler concentration was determined. The experimental results are presented in graphs and tables (see Fig. 1). It was found that in the formation velocity interval - of  $0.17 - 170\ sec^{-1}$ , the polymer behaved as a Newtonian liquid. Introduction of filler, up to 20 wt percent, leads to formation of suspensions, the properties of which are

Card 1/2

UDC: 532.135:541.182

L 11719-66

ACC NR: AP6004198

2

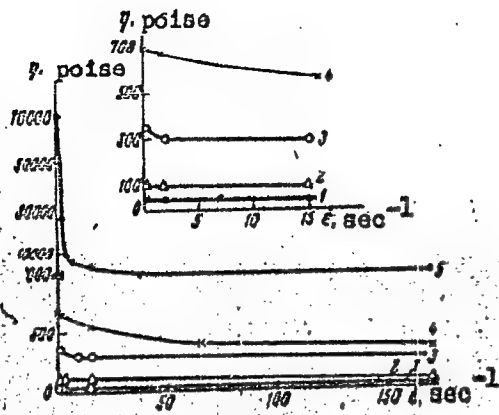


Fig. 1. Dependence of  $\eta$  -  $\epsilon$  for the polymer (1) paste with 5 (2), 10 (3), and 20 (5) parts of BS-280 per 100 parts of polymer SKTN (low-molecular weight rubber).

similar to those of the polymer. The addition of larger amounts of filler causes the formation of thixotropic pastes exhibiting viscosity anomalies and weak tensile properties. It is concluded from electron-microscopy studies that the filler particles attain a maximum size of 200Å and are randomly dispersed throughout the system. Thanks are given to Z. N. Shulyak (VNIISHP) for kindly supplying the samples of white carbon-black. Orig. art. has: 3 tables and 7 graphs.

SUB CODE: 11/ SUB. DATE: 02Oct64/ ORIG REF: 004/ OTH REF: 005

Card 2/2 FW

ZATSEPINA-DIZERTINSKAIA, T. S.,

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PHASE I BOOK EXPLOITATION SOV/5575

Akademiya nauk SSSR. Astronomicheskii sovet.

Dulleton' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli, no. 6. (Bulletin of the Stations for Optical Observation of Artificial Earth Satellites, No. 6) Moscow, 1959. 23 p. 500 copies printed.

Sponsoring Agency: Astronomicheskii sovet Akademii nauk SSSR.

Recd. Ed.: Ye. Z. Gladin; Secretary: O. A. Severnaya.

PURPOSE : This bulletin is intended for scientists and engineers concerned with optical tracking of artificial satellites.

COVERAGE : The bulletin contains 9 articles which present the results of satellite observations, and describe methods and specific equipment used for photographic observation of earth satellites. An appendix contains a listing of 84 Soviet satellite observation stations with station number. No personalities

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Bulletin of the Stations (Cont.)

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are mentioned. There are no references.

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